The World's Most Advanced Gas Log Space Heater

Patented Technology • Award Winning Design

2007 DEALER DESIGN AWARDS
the NEWS | SILVER

2007 AHR EXPO INNOVATION AWARDS

The First and ONLY Gas Log Space Heater That

- Is Certified to Exceed 93% Efficiency – A.F.U.E.
- Uses PVC Pipe for Low-Cost Venting Installation
- Humidifies as it Heats
- Installs as Fireplace, Insert, or Freestanding Stove
- Installs as a Direct-Vent or Single-Vent System

Mantis™

The Future of Efficiency

Welcome to Mantis

Heating with a Mantis can reduce your annual heating costs by 35 percent - compared to a conventional direct-vent heater or fireplace. Heating with a natural gas Mantis in place of a pellet stove can save up to 50 percent on fuel every year; or up to 42 percent compared to heating with a wood-burning stove.

And because the Mantis operates on Natural Gas or LP, you eliminate the mess and manual labor inherent in heating with solid fuels, such as pellets and wood.

How Efficient is Efficient?

The super-efficient Mantis exceeds 93 Percent A.F.U.E. – making it the most efficient vented heater you can buy.

The U.S. government recognizes only Annual Fuel Utilization Efficiency (AFUE) when comparing heater efficiency. Listings that show "Steady State" or other terminology tend to overstate efficiency and are not valid comparisons to AFUE. A heater rated at 75 to 80 percent Steady State might rate just 60-percent AFUE. Compared to a conventional gas heater, operating at 60-percent A.F.U.E., the Mantis can save 35 percent on your annual heating bill.

What Makes Mantis Unique?

Inside the Mantis a three-stage heat exchanger captures more than 93 percent of the heat energy from the burner and directs this warm air into your home – not up the flue. This extraordinary heat transfer efficiency means, while the temperature inside the combustion chamber may exceed 900 degrees F, the exhaust gas exits the flue at just 120 to 130 degrees F – as little as two feet away!

This makes Mantis the first and only condensing fireplace, which means the exhaust from the Mantis is cool enough to run in PVC.

	Mantis	Conventional DV Fireplace
Efficiency	93%	60%
Gas Input (Btu/H)	28,000	28,000
Heat Output (Btu/H)	26,040	16,800
Exhaust Gas Heat Loss (Btu/H)	1,960	11,200!!
Annual Savings	35%	0

Because the Mantis uses PVC for venting, the total installed price (unit, labor, and materials) compares favorably to a direct-vent fireplace or pellet stove.

The Mantis puts the green in environmentally friendly. Its power-vented heat-exchanger technology ensures the optimal air/fuel mixture for consistently clean-burning operation.
With its clean burn and super-efficient heat exchanger, the Mantis exhaust is as low as 120 degrees F, so it generates fewer greenhouse gases – CO and CO2 – per Btu of heat than conventional gas heat sources.

With the majority of the heat delivered to your room, the top and sides of the Mantis stay cool-to-the-touch – so cool, in fact, it earned a zero-clearance certification for installation against any combustible building materials.

The dual burners deliver 9,000 Btu (front only), 19,000 Btu (rear only) or 28,000 Btu (combined). Operating the front burner alone lets you enjoy the ambiance of the attractive log set and gas fire without overheating the room. But, when the temperature dips, the Mantis rises to the occasion, switching on the second burner to produce maximum heat output.

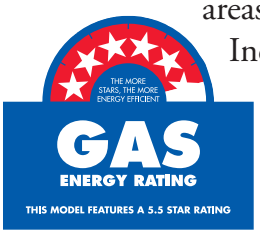
Developed in Australia more than 10 Years Ago

Patented Design – Worldwide

Mantis outperforms most Energy Star rated central furnaces in heat transfer efficiency.

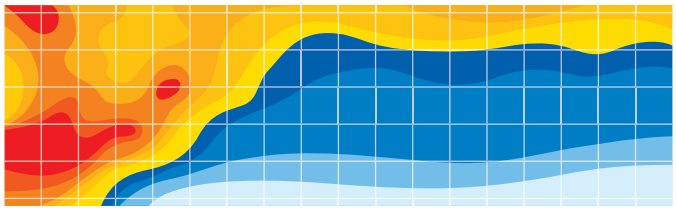
Mantis is so new to US markets, it fits no current Energy Star category (The high-efficiency furnace classification requires "ductwork" to convey the heated air. Ironically, ductwork contributes to heat loss.)

The Mantis earns a 5.52 out of 6 on the Star Rating system used in Australia. No vented heating system outperforms it. The Star system graphically represents heat transfer efficiency. The red and orange areas represent area of 1,500-sq ft room heated after one hour at 28,000 Btu/H input in Independent Laboratory Testing.

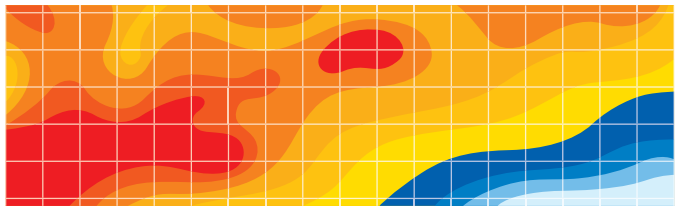


For comparison, a typical 60-percent A.F.U.E. system would rate just three stars.

Empire is working with the Gas Appliance Manufacturers Association and the U.S. Department of Energy to create an Energy Star category. As of today, only Mantis would qualify for this new category.


Graph shows a simplified visual of actual laboratory testing.

3 Star Rating Heater


Graph shows a simplified visual of actual laboratory testing.

5.7 Star Rating Heater

The Award Winning Mantis

The Mantis won the 2007 Innovation Award, which recognizes products that best help HVAC contractors provide safer, healthier, more efficient, and more comfortable environments. Sponsored by the American Society of Heating, Refrigerating & Air-Conditioning Engineers, the Air Conditioning & Refrigeration Institute, & the International Exposition Company.

The 2007 Dealer Design Award recognizes products that advance home heating & air conditioning, and attain new levels of installation, maintenance, and service ease. Sponsored by the NEWS, a monthly magazine serving HVAC Contractors.

Mantis Pedestal Package may be installed with or without pedestal

Advanced Technology and Solid-State Controls

The sophisticated control system monitors every critical aspect of the Mantis's operation to maximize efficiency, comfort, and safety.

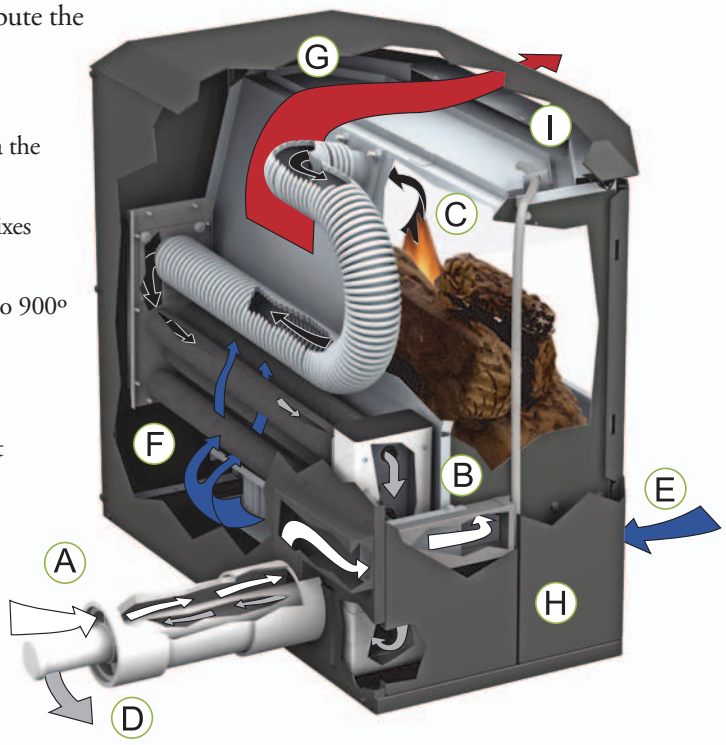
For all its advanced technology, the Mantis is amazingly easy to operate. Two on/off buttons control the two burners, allowing you to set the temperature to low (front only), medium (rear only) or high (both burners).

Or, choose one of the optional external controls, such as the programmable thermostat, and let your Mantis deliver the right amount of heat for each day of the week and time of the day.

The Mantis automatically purges unburned gas from the combustion chamber for 40 seconds before each ignition for controlled, even starts every time. The modern, hot-surface ignitors conserve gas by eliminating the need for a standing pilot.

The three-speed automatic circulating fan cycles on only after the Mantis reaches operating temperature and continues blowing as long as it senses warm air. You never feel a cool draft – just warm, humidified air.

Inside the Mantis, separate systems create the heat and distribute the heat, so room air stays isolated from the combustion process.



Creating the Heat (White, Black and Gray Arrows)

(A) The power vent blower draws in outdoor air (White Arrow) via the outer direct-vent pipe.

(B) Inside the fireplace the three-stage burner, below the log set, mixes the air and gas (LP or natural) and burns it to produce heat.

(C) The power vent blower extracts the hot combustion gases (up to 900º Fahrenheit) out of the combustion chamber and through the heat exchanger (Black Arrow).

(D) The combustion gases exiting the heat exchanger (now cooled to 130º) are forced outdoors through the small diameter inner vent pipe (Gray Arrow).

Circulating the Warmth (Blue and Red Arrows)

(E) The circulation blower draws in room air (Blue Arrow) via louvers beneath the fireplace...

(F) ...and forces it across the heat exchanger fins. This transfers 93% of the heat from the combustion gases inside the tubes to the room air flowing through the fins on the outside of the tubes.

(G) The blower forces this warm air out through louvers above the fireplace to warm the home.

Adding the Humidity

(H) Droplets of moisture, a by-product of the Mantis' super-efficient heat exchanger, are captured in a holding tank (not visible).

(I) Once the Mantis reaches operating temperature, a pump cycles on to send the collected water onto a stainless steel tray above the combustion chamber, where heat and airflow circulate the water vapor. This added humidity helps alleviate the static shocks, wood furniture damage, and even sore throats caused by dry winter air.

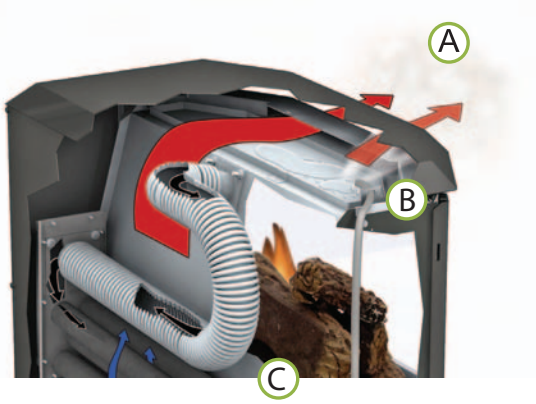
Mantis Insert Package

Humidify While You Heat

The Mantis captures condensed water – a by-product of its clean combustion and super-efficient heat exchanger – and evaporates it to introduce humidity to the room air.

This pure distilled water contains fewer contaminants than the drinking water in most homes. An automatic blower in the Mantis gently diffuses the humidified air into the room.

The result is a more comfortable home environment, fewer complaints of dry throats, and less frequent static electricity discharges as you move about the room.



Automatic Humidification

Most heaters dry the air. Mantis actually adds humidity to the home for greater winter comfort – and fewer static shocks

(A) Heat and circulating air evaporate the water to create humidity.

(B) Mantis pumps the water onto an evaporation tray above the firebox.

(C) Water vapor, a combustion by-product, condenses out of rapidly cooled exhaust and collects in a holding tank (not shown).

Quality Construction – Factory Tested

Critical internal components in the Mantis – including the heat exchanger – are manufactured from the same corrosion-resistant and heat-resistant stainless steel originally developed for high-efficiency central furnaces.

The Mantis is available with decorative fireplace frames in rich 24-karat gold plating, contemporary nickel chrome plating, or matte black. The steel cabinet is finished in black matte powder coating to resist chipping and smudging.

Precision-formed one-piece ceramic glass withstands temperatures in excess of 1,500-degrees F and radiates more heat into the room, while providing a great view of the flames and log set from any angle.

The Mantis' hand-painted ceramic fiber log set complements the flame pattern, and glows when heated to provide exceptional realism.

Two rugged printed circuit boards – designed specifically for the Mantis – monitor all functions and controls. The hand-assembled wiring harness is made from heat-insulated copper wire fitted with click-lock connectors for reliable performance.

Two powerful blowers inside the Mantis feature maintenance-free motors driving precisely balanced fans for a lifetime of efficient performance. One fan draws air into the combustion chamber and draws hot gases through the heat exchanger. The second fan draws room air across the heat exchanger and circulates throughout the room.

To ensure your fireplace performs flawlessly, every Mantis is connected to gas, electricity, and a PVC exhaust system, and test fired before it leaves our factory.

Mantis Pedestal Package

Versatile Installation

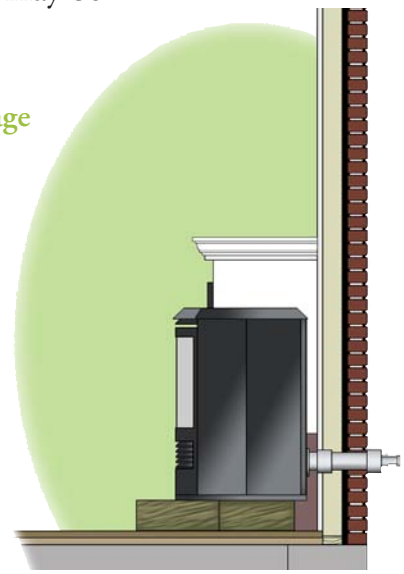
With the power-vented exhaust and intake made from PVC, the venting options are numerous. Venting can run in any direction – even down and out through a basement or crawl space.

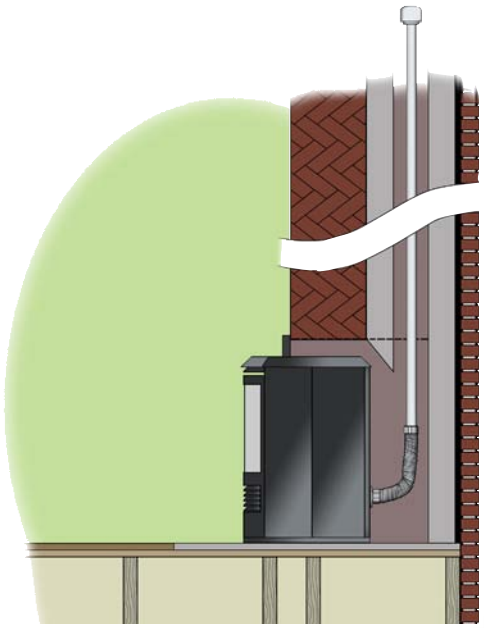
Install the Mantis as a direct-vent co-axial system, as a direct-vent co-linear, or as a single-vent system. Using PVC for venting significantly reduces installation time, and requires cutting a much smaller opening in the home's exterior than is required for conventional metal venting.

All of the venting applications shown may be used with any Mantis Package.

Zero-Clearance Fireplace Package

Mantis installed with optional co-axial direct-venting along any outside wall (up to 4 ft). Shown in an Empire cabinet mantel with integral base.



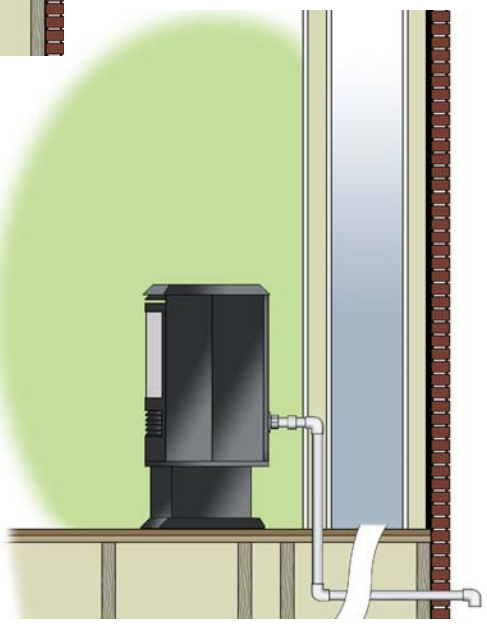


Fireplace Insert Package

Mantis installed as an insert in an existing wood-burning or vented gas fireplace, with co-linear direct-vent or single-vent vertical termination (up to 40 ft).

Freestanding Pedestal Stove Pakage

Mantis on a pedestal installed with co-linear direct-vent or single vent running downward and out to a horizontal termination (up to 40 ft).



Mantis Fireplace Package (Shown with Oak Mantel)

Mantis Packages

Mantis Fireplace Package for Zero-Clearance Fireplace with Mantel Includes PVCA Co-linear Adaptor, PVVKSH Vent Adaptor, PV2H Slim Top, PVE-1 Surround, T24V 24-V Thermostat	
BF28-BM	Mantis Bay Window Fireplace Package, Black Door
BF28-CM	Mantis Bay Window Fireplace Package, Chrome Door
BF28-GM	Mantis Bay Window Fireplace Package, Gold Door
Mantis Insert Package for Installation in an Existing Fireplace Includes PVCA Co-linear Adaptor, PVVKSH Vent Adaptor, PVTC Termination Cap, PVVKCFA Vent Flex Kit (x 2), PV2H Slim Top, PVE-1 Surround, and T24V 24-V Thermostat	
BI28-BM	Mantis Bay Window Insert Package, Black Door
BI28-CM	Mantis Bay Window Insert Package, Chrome Door
BI28-GM	Mantis Bay Window Insert Package, Gold Door
Mantis Pedestal Package for Installation as a Freestanding Stove (with or without pedestal) Includes PVCA Co-linear Adaptor, PVVKSH Single-Vent Adaptor, PVPK Pedestal, PVVTC Termination Cap, T24V 24-V Thermostat	
BP28-BM	Mantis Bay Window Pedestal Package, Black Door
BP28-CM	Mantis Bay Window Pedestal Package, Chrome Door
BP28-GM	Mantis Bay Window Pedestal Package, Gold Door
Additional Control Options	
TMV	Wall Thermostat, Wireless
TMV2	Wall Thermostat, 2-Stage, Wire
FRBTC	Remote Control, Thermostat, Battery Operated
FRBTP	Remote Control, Programmable, Battery Operated
Mantis Options and Accessories	
PVPK	Black Pedestal Base for Mantis
PVE-1	Black Metal Surround Kit 6-inch, for insert installations
PV-2H	Top, 5-inch, for insert or zero-clearance fireplace installation
PV-4H	Top, 10-inch, for insert installation, projects Mantis further into room
PVSH	Black Metal Rear Shroud, 5-inch deep, conceals vent pipes on Pedestal Package
Floor Pad	May be required for applications over carpet or tile – see dealer
EMBF-9S	Cabinet Mantel
EMBC-9S	Corner Cabinet Mantel

Mantels are available in Cherry - C, Dark Oak – DO, Oak – O, Unfinished Hardwood – UH, Unfinished Oak – UO, and White – W.

Warranty Information

Limited Ten-Year Heat Exchanger Warranty

Empire promises to the owner that if the heat exchanger (see parts list) fails because of defective workmanship or material within ten years from the date of purchase, Empire will repair, or at Empire's option, replace the defective heat exchanger.

Limited Five-Year Parts Warranty

Should any part fail because of defective workmanship or material within five years from the date of purchase, Empire will repair or replace it, at Empire's option.

Limited Two-Year Labor Warranty

Should any part fail because of defective workmanship or material within two years from the date of purchase, Empire will repair or replace it, at Empire's option. All labor must be performed by a qualified gas appliance technician.

Duties Of The Owner

The heating appliance must be installed by a qualified installer and operated in accordance with the written instructions furnished with the appliance.

Ready access to the appliance for service is the responsibility of the owner.

Travel, diagnostic cost, service labor, labor to repair the defective appliance, and freight charges on warranty parts to and from the factory will be the responsibility of the owner.

A bill of sale, cancelled check, or payment record should be kept to verify purchase date and establish warranty period.

What is Not Covered

This warranty does not imply or assume any responsibility for damages resulting from the use, misuse, or improper installation of this heating appliance.

This warranty covers only claims involving defective workmanship or materials.

How To Get Service

Service under this warranty must be obtained by contacting your Empire dealer. Provide your dealer with the model number, serial number, type of gas and purchase verification information.

If contacting your Empire dealer does not provide satisfactory service, contact: Consumer Relations Department, Empire Comfort Systems Inc., P.O. Box 529, Belleville, Illinois 62222, or go to www.empirecomfort.com.

Your Rights Under State Law

This warranty gives you specific legal rights. You may have other rights, which vary from state to state.

Member of the following industry associations:

This appliance is design-certified to the ANSI standard by:

EMPIRE COMFORT SYSTEMS

Our Signature is Efficiency

Empire is committed to continuous product improvement; specifications are subject to change without notice. Flame size, shape, and color will vary from photos. Our mantels feature natural veneers and hand-rubbed finishes – wood grain and color will vary. Adjust light levels and use "natural light" incandescent bulbs to enhance the dramatic look for your wooden mantel.

Mantis is a trademark of Empire Comfort Systems Inc.
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